

AL-TP-1991-0025

AD-A239 973



**LEADERSHIP EFFECTIVENESS ASSESSMENT
PROFILE (LEAP): ORGANIZATIONAL TAXONOMY
AND ENLISTED ITEM POOL DEVELOPMENT**

Victor H. Appel
Paul D. Grubb
Eric D. Elder
Rebecca E. Leamon

Universal Energy Systems, Incorporated
8961 Tesoro Drive, Suite 600
San Antonio, TX 78217-6225

Thomas W. Watson
James A. Earles

HUMAN RESOURCES DIRECTORATE
MANPOWER AND PERSONNEL RESEARCH DIVISION
Brooks Air Force Base, TX 78235-5000

August 1991

Interim Paper for Period August 1989 - March 1991

Approved for public release; distribution is unlimited.

91 8 30 004

91-09334



AIR FORCE SYSTEMS COMMAND
BROOKS AIR FORCE BASE, TEXAS 78235-5000

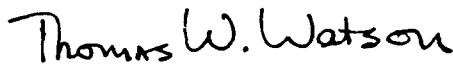
ARMSTRONG
LABORATORY

NOTICES

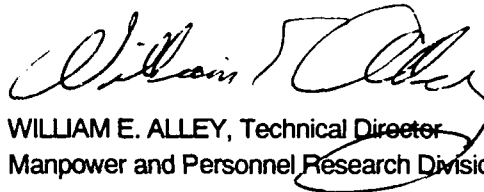
When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely Government-related procurement, the United States Government incurs no responsibility or any obligation whatsoever. The fact that the Government may have formulated or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication, or otherwise in any manner construed, as licensing the holder, or any other person or corporation; or as conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

The Office of Public Affairs has reviewed this paper, and it is releasable to the National Technical Information Service, where it will be available to the general public, including foreign nationals.

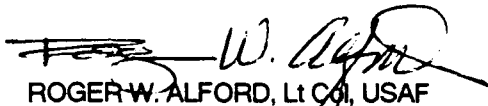
This paper has been reviewed and is approved for publication.



THOMAS W. WATSON
Project Scientist



WILLIAM E. ALLEY, Technical Director
Manpower and Personnel Research Division



ROGER W. ALFORD, Lt Col, USAF
Chief, Manpower and Personnel Research Division

REPORT DOCUMENTATION PAGEForm Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE August 1991	3. REPORT TYPE AND DATES COVERED Interim - August 1989 - March 1991	
4. TITLE AND SUBTITLE The Leadership Effectiveness Assessment Profile (LEAP): Organizational Taxonomy and Enlisted Item Pool Development			5. FUNDING NUMBERS C - F41689-86-D-0052 PE - 62205F PR - 1121 TA - 13 WU - 01	
6. AUTHOR(S) Victor H. Appel Paul D. Grubb Eric D. Elder Rebecca E. Leamon Thomas W. Watson James A. Earles				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Universal Energy Systems, Incorporated 8961 Tesoro Drive, Suite 600 San Antonio, TX 78217-6225			8. PERFORMING ORGANIZATION REPORT NUMBER 788-044 ✓	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Armstrong Laboratory Human Resources Directorate Manpower and Personnel Research Division Brooks Air Force Base, TX 78235-5000			10. SPONSORING/MONITORING AGENCY REPORT NUMBER AL-TP-1991-0025	
11. SUPPLEMENTARY NOTES Armstrong Laboratory Technical Monitor: Dr. Thomas W. Watson, (512) 536-3876				
12a. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) This paper documents the creation of a pool of 174 biographical data items for Air Force enlisted selection and classification. An Organizational Adaptation Paradigm was created and used to guide time development. This paradigm assumes that in addition to task-related skills measured by traditional instruments such as the Armed Services Vocational Battery (ASVAB), organization (i.e., non-task-specific) skills are required to adapt to different organizational dimensions. The demands of the organizational environment are identified by a comprehensive Structure and Process Organizational Taxonomy (SPOT). For Air Force enlisted personnel, the skills necessary to adapt to each organizational demand were inferred and behavioral exemplars derived. Biographical items were then generated from these behaviors. The Organizational Adaption Paradigm and the SPOT are specifically applied to the Air Force in this project, and used primarily as a simple heuristic device for ensuring identification of a wide relatively comprehensive range of skills. However, it is argued that they are easily generalized to other organizations.				
14. SUBJECT TERMS Air Force Enlisted Personnel Selection Enlisted Personnel Performance Enlisted Personnel Retention			15. NUMBER OF PAGES 72 16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL	

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION	1
II. THE CONCEPTUAL FOUNDATION FOR ITEM POOL DEVELOPMENT	2
Qualities of the Ideal Enlisted Person	2
The Organizational Adaptation Paradigm	3
The Structure and Process Organizational Taxonomy	3
III. CHARACTERIZING AIR FORCE ORGANIZATIONAL DIMENSIONS	5
Incorporating the Ideal Enlisted Qualities into the SPOT	5
SPOT Construct Descriptions and Their Posited Levels Within the Air Force	7
Known Organization-Related Predictors and the SPOT	14
IV. GENERATING THE SET OF BIOGRAPHICAL ITEMS	14
Skill-Related Behaviors	14
Critical Organizational Dimensions	15
Biographical Items	15
V. SUMMARY, IMPLICATIONS AND RECOMMENDATIONS	17
Summary	17
Implications	17
Recommendations	18
REFERENCES	19

	<u>Page</u>
APPENDIX A: STRUCTURAL AND PROCESS ORGANIZATIONAL TAXONOMY (SPOT) MODEL OF AIR FORCE PERFORMANCE AND RETENTION	23
APPENDIX B: RESEARCH PROVIDING EVIDENCE OF THE PREDICTIVE VALUE OF THE VARIABLES FOR PERFORMANCE OR RETENTION	39
APPENDIX C: ENLISTED LEAP ITEM FREQUENCY	47
APPENDIX D: SUGGESTED METHODOLOGY FOR DETERMINING THE LEVEL OF ORGANIZATION-BASED DIMENSIONS	51
APPENDIX E: ORGANIZATIONAL ENVIRONMENT ASSESSMENT SCALE	55

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1 Level of Organizational Dimensions Characterizing the Air Force	6

PREFACE

The present effort was accomplished as Task 44, Contract Number F41689-86-D-0052, (SB 58160432), Subcontract Number S-788-044-001, Field Testing/Refinement of the Leadership Effectiveness Assessment Profile (LEAP), with UES, Inc. of Dayton, Ohio. The task was subcontracted to Victor H. Appel, Ph.D. and Associates, of Austin, Texas. This study extended to enlisted personnel previous efforts by the Manpower and Personnel Division of the Armstrong Laboratory, Human Resources Directorate (AL/HRM) to develop biographical survey measures to improve officer selection and classification.

The investigators appreciate the important contributions made to the project by Dr. Mark Shermis, Duane Tway, David Grossman, and Harold Thiele. These members of the LEAP project staff made significant contributions to this effort.

The investigators gratefully acknowledge the assistance rendered by the personnel research scientists of the AL/HRM, including Drs. Malcolm James Ree and Lonnie D. Valentine, Jr. Also, Ms. Nancy Allin greatly improved the manuscript through extensive technical editing. We are also indebted to Lt. Col. Roger E. Alford, Deputy Chief of the Manpower and Personnel Division, and to Dr. William E. Alley, Technical Director of that Division, for their guidance and support.



Accession For	
NTIS GRA&I	<input checked="checked" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

SUMMARY

This paper documents the creation of a pool of 174 biographical data items for possible use in Air Force enlisted selection and classification. An Organizational Adaptation Paradigm was created and used to guide item development. This paradigm assumes that in addition to task-related skills measured by traditional instruments such as the Armed Services Vocational Aptitude Battery (ASVAB), organization-related skills (i.e., non-task-specific) are required to adapt to different organizational dimensions. These skills are identified by a comprehensive Structure and Process Organizational Taxonomy (SPOT). For Air Force enlisted personnel, the skills necessary to adapt to each dimension were inferred and behavioral exemplars derived. Biographical items were then generated from these behavioral examples.

In this project, the SPOT was used primarily as a heuristic device for ensuring the identification of a comprehensive range of skills. The potential of the SPOT is likely to be increased with the application of a more empirically based methodology, as proposed herein. A review of the literature on non-task-related predictors of work performance and retention in both the military and civilian literature revealed that all predictors from the literature were identified by the SPOT. In addition, the SPOT identified 31 predictors not found in the literature. The heuristic value of the SPOT was further shown by identifying critical dimensions which were given greater emphasis when devising the biographical item pool. Although the Organizational Adaptation Paradigm and the SPOT are specifically applied to the Air Force in this context, they are easily generalized to other organizations.

LEADERSHIP EFFECTIVENESS ASSESSMENT PROFILE (LEAP):
ORGANIZATIONAL TAXONOMY AND
INITIAL ENLISTED ITEM POOL DEVELOPMENT

I. INTRODUCTION

The Armstrong Laboratory's Human Resources Directorate (AL/HR) has recently sought to develop new measures of abilities or attributes for use in selection and classification that are not currently assessed by tests in ability measures (AL/HRMIL, in preparation; Berger, Gupta, Berger, & Skinner, 1990); a Basic Attributes Test battery of psychomotor, cognitive and personality measures for pilot selection (Carretta, 1987; Siem, 1990), and the Leadership Effectiveness Assessment Profile (LEAP) (Appel, Grubb, Shermis, Watson, & Cole, 1990). The LEAP is a prototype biographical measure of leadership and managership potential. The initial LEAP was designed for use with officers and is currently being field tested and refined.

The present paper describes the extension of the LEAP project into the enlisted domain with the development of a biographical item pool for noncommissioned personnel. As in the development of the initial officer prototype (Appel et al., 1990), desirable behaviors were generated from a theoretical model of effectiveness and retention, and biographical items were written that reflect previous experience with these behaviors. The unique organizational experiences and job demands of enlisted personnel, however, resulted in the need for a more generic theoretical model than that used for officers.

The Organizational Adaptation Paradigm was developed to distinguish between two classes of skills of effective workers who remain within an organization: (a) task-related skills, which enable one to effectively perform position-related tasks; and (b) organization-related skills, which allow one to adapt successfully to the organizational environment. The Air Force already possesses highly developed selection instruments that emphasize task-related attributes. Therefore, the present effort focused on those organization-related skills necessary for sustained successful performance of enlisted personnel in the Air Force. The Structure and Process Organizational Taxonomy (SPOT) was developed as a heuristic device to identify these organization-related skills. The present paper describes the SPOT and its application in developing a preliminary pool of 174 biographical items for selection and classification of enlisted personnel.

II. THE CONCEPTUAL FOUNDATION FOR ITEM POOL DEVELOPMENT

Biographical instruments measure experiences that reflect previous demonstration of the skills required for successful performance and retention. Item development for these instruments proceeded in three stages:

1. Identifying a well-elaborated theoretical model to account for these skills;
2. Operationally defining each skill identified in the model in terms of a set of observable behaviors (i.e., a behavioral taxonomy); and
3. Developing items for each element in the behavioral taxonomy.

Qualities of the Ideal Enlisted Person

Military literature did not provide a clear conception of the optimal qualities for enlisted personnel. Identifying enlisted personnel characteristics associated with effective performance and retention using traditional empirical approaches such as job analysis would have been prohibitively expensive. The investigators therefore had to rely on conceptually assessing what was known or could be known about the qualities of the ideal enlisted person. Methodological rigor was ensured by detailing and following a systematic process of information gathering and assessment.

A panel was assembled that was familiar with either or both the civilian and military work performance and retention literature. It was composed of a retired Air Force pilot, an Army captain with 10 years of prior enlisted service, a master's level psychologist, and a doctoral-level psychologist with prior enlisted service in the Navy. This panel met three times after reading materials on enlisted personnel, including Air Force and Army training manuals as well as other relevant literature on predicting employee effectiveness and retention. The panel (a) generated requisite desirable skills, (b) arrived at a consensus on the definition and scope of each skill, and (c) ensured as much as possible that each skill was consistent with military and/or psychological protocol, philosophy, and theory. Each skill had to be considered learnable by each individual within the applicant population, and bear a label familiar to both military personnel and psychological researchers. Forty-eight conceptually independent enlisted skills were identified. Each had a clear definition and scope.

The Organizational Adaptation Paradigm

Two considerations guided the process of identifying the ideal qualities of an enlisted individual and determined the nature of these 48 identified skills. First, because the intent was to augment the ASVAB, the skills sought were "non-cognitive," rather than the cognitive manipulation of symbols and ideas that is traditionally associated with selection. Second, the non-cognitive skills sought had to apply to the wide variety of tasks that an enlisted member might have to perform. This led to identifying "generic" non-cognitive skills that focused more on organization-related than task-related phenomena. As a consequence, 48 skills were identified as organization-related, or enabling the individual to successfully adapt to the organization. Together, the cognitive and non-cognitive skills comprise the Organizational Adaptation Paradigm as follows:

$$\text{Performance and Retention} = f(\text{Task-related Skills}) + (\text{Organization-related Skills})$$

The paradigm identifies two aspects of successful performance. To maximize successful performance, an individual must possess not only the skills needed to perform tasks, but also the ability to maneuver through the organization. Although not necessarily independent, the two conditions are conceptually distinct. This paradigm thus provides a useful framework for understanding the added predictive power gained when a non-cognitive (biographical) instrument is used in conjunction with a cognitive measure.

The Organizational Adaptation Paradigm also provides a conceptual framework for maximizing the utility of the biographical approach. In particular, it explicates the comprehensive set of skills necessary for successfully adapting to an organization. That is, specifying the aspects of the organization to which individuals must adapt provides a framework from which to infer the requisite skills needed to function effectively within it. Such an organizational taxonomy has two advantageous outcomes. First, it provides a theoretical framework for understanding exactly if, how, and why the 48 identified skills are potentially valid predictors of enlisted performance and retention. Second, to the extent this taxonomy is comprehensive, it gives a more comprehensive listing of organization-related, non-cognitive skills.

The Structure and Process Organizational Taxonomy (SPOT)

Characterizing organizations on the basis of particular dimensions is a fundamental step for researchers who compare and contrast organizations. A survey of

extant organizational taxonomies revealed that most identify only one or two dimensions. Organizations have been characterized, for instance, according to their goals or ability to meet social needs (Eisenstadt, 1958; Gordon & Babchuck, 1959; Parsons, 1956; Scott, 1959); their membership (Hughes, 1952); their beneficiaries (Blau & Scott, 1962); their patterns of normative compliance (Etzioni, 1961; Katz & Kahn, 1976); their political balance of control (Van Riper, 1966); and their division of labor (Katz & Kahn, 1976; Mintzberg, 1986).

Two organizational taxonomies were found to be comprehensive in scope. One is that of Sells (1968), who describes a taxonomy of organizations developed for a NASA study. It is based on the open systems approach (Katz & Kahn, 1976). Designed to provide guidelines for assessing group organization and interaction among small-sized crews during extended space flights, this taxonomy lists eight major variables such as Objectives and Goals, Technology, Physical Environment, and Organizational Structure. Each, in turn, was elaborated with subcomponents.

The second comprehensive taxonomy found is that developed by Indik (1968). Specifically designed to provide an organized framework for systematizing the research results found in organizational behavior literature, Indik believed that it would

generate systematic hypotheses that are consistent with the present findings, and should also be explanatory of future findings, much in the same way that Miller's (1965) article on living systems generates cross level hypotheses that are consistent with present findings and potentially fruitful for future hypothesis testing. (p. 7)

Sells' (1968) and Indik's (1968) taxonomies are similar. However, Indik's is more comprehensive in that it differentiates among various levels of organized activity (organization, small group, and individual) and between structural and procedural-functional aspects of organizations. In fact, Indik's model has seven taxonomies, each focusing on a major level or aspect of the organization.

The authors decided to adopt Indik's Organizational Function-Process taxonomy as a base on which to build a more general one, the Structure and Process Organizational Taxonomy (SPOT). Elements were also borrowed from other aspects of Indik's model and from Sells' (1968) work. In addition, several of the major variables were redefined to parallel the previously developed LEAP officer model, especially in the areas of leadership and managership.

The SPOT identifies 14 organizational dimensions and 50 sub-dimensions that apply to any organization, and to any level within an organization. The 14 organizational dimensions are as follows: Communication, Control, Coordination, Socialization/Integration, Managership, Leadership, Degree of Flux, Conflict Control Processes, Role Specification, Degree of Bureaucracy, Natural Environmental Conditions, Availability of Needed Resources, Relations with Social Environment, and Externally Imposed Change (see Table 1).

The SPOT can be used heuristically to ensure that a comprehensive set of organization-related skills are identified. Requisite skills can be inferred by characterizing the organization with regard to each sub-dimension and inferring the skills necessary to adapt to such circumstances. For example, an organization rated low on the extent of coordinated activity might need individuals with independent project design skills.

III. CHARACTERIZING AIR FORCE ORGANIZATIONAL DIMENSIONS

The panel performed a SPOT analysis of the Air Force as an organization, rating by consensus the Air Force on each sub-dimension, as high, medium, or low. This preliminary rating profile was then presented to military researchers and others for review. Suggested changes were then discussed and, as required, incorporated by the panel. The results of this rating procedure, the skills inferred for each dimension, and the set of exemplary behaviors for each skill are listed in Appendix A.

Incorporating the Ideal Enlisted Qualities into the SPOT

By consensus judgment of the panel, the 48 skills previously generated were linked to the appropriate organizational sub-dimensions. In a few cases, an ability was redefined slightly, but in no instance was an ability found that did not fit the model. Thirty-one additional skills were then inferred directly from the SPOT, usually with regard to dimensions for which no a priori skills had been previously identified. Appendix A identifies those skills inferred directly from the model.

The following section describes the characterization of the Air Force with the SPOT and the skills relevant to each organizational dimension. A listing of these organizational dimensions, along with the panel's rating of each dimension, is presented in Table 1.

Table 1. Organizational Dimensions Characterizing the Air Force

ORGANIZATIONAL DIMENSION Sub-Dimension (Judged Level) ^a	ORGANIZATIONAL DIMENSION Sub-Dimension (Judged Level) ^a
I. COMMUNICATION A. Quantity of information exchanged (L) B. Emphasis on task rather than socioemotional aspects (H) C. Toleration of improper communication (L) D. Degree of unstructured/open communication (L)	VII. DEGREE OF FLUX A. Expected (H) B. Unexpected (M)
II. CONTROL A. Quantity of imposed control (H) B. Extent to which control is distributed equally (H) C. Actual/desired discrepancy (H)	VIII. CONFLICT CONTROL PROCESSES A. Amount of conflict (H) B. Amount of conflict reduction/resolution (H) C. Amount of tension from unresolved conflict (H) D. Amount of tension reduction (L)
III. COORDINATION A. Extent of coordinated activity (H) B. Extent to which coordinated efforts are clarified (H) C. Extent of time-sequenced coordinated activity (M)	IX. ROLE SPECIFICATION A. Degree of role definition (H) B. Distribution of roles (H)
IV. SOCIALIZATION/INTEGRATION A. Extent to which successful recruitment involves socialization (H) B. Extent of orientation required for successful adaptation (H) C. Degree to which reward process involves socialization (H) D. Extent to which task orientation is integral to socialization (H)	X. DEGREE OF BUREAUCRACY A. Amount (H) B. Distribution (H)
V. MANAGERSHIP A. Planning and organizing (H) B. Problem solving (H) C. Consulting and delegating (H) D. Monitoring operations and environment (H) E. Clarifying roles and objectives (M) F. Informing (H)	XI. NATURAL ENVIRONMENTAL CONDITIONS A. Life-threatening conditions (M) B. Flight conditions (L) C. Isolated conditions (M) D. Adverse physical conditions (M)
VI. LEADERSHIP A. Individualized consideration (M) B. Intellectual stimulation (L) C. Charisma (H) D. Contingent reward (L) E. Management-by-exception (M)	XII. AVAILABILITY OF NEEDED RESOURCES A. Personnel (H) B. Material (M) C. Financial (M) D. Demand for military action (L) E. Technology (H)
	XIII. RELATIONS WITH SOCIAL ENVIRONMENT A. Degree of technological similarity (H) B. Amount of interaction with non-organization people (L) C. Concern with social environment (public acceptance) (M) D. Concern with social environment (integration of Air Force into larger social system) (H)
	XIV. EXTERNALLY IMPOSED CHANGE A. Frequency of changes (L) B. Rate of implementation of change (H)

^a Three levels are posited: High (H), Medium (M), and Low (L).

SPOT Construct Descriptions and Their Posited Levels Within the Air Force

The SPOT includes 14 organizational dimensions. These dimensions, their definitions, and their posited levels within the Air Force, and the skills inferred from them are given below. Each of the following dimensions was characterized as being at one of three levels: high (H), medium (M), or low (L). The reader is referred to Indik (1968) for a more detailed definition of many of these dimensions.

Communication. Communication refers to the patterns of information exchange within the organization. Four aspects are identified: (a) how much information is exchanged, (b) how much is task-oriented rather than socio-emotionally oriented, (c) how much improper communication is tolerated, and (d) what degree of communication is unstructured/open.

The panel characterized the Air Force as having a relatively low level of communication (L), as placing a great emphasis on task-oriented communication (H), and as being highly structured, with little tolerance for improper communication (L). A small degree of unstructured/open communication is allowed (L), primarily restricted to the horizontal transfer of information among personnel of similar rank.

Interpersonal competence and good social skills are required to compensate for the limited information exchange outside of formal communication channels and the low level of socio-emotional communication. A sensitivity to constraints on communication keeps communication within appropriate channels. Finally, the ability to express contrary or alternative viewpoints up the chain of command is necessary in the face of the downward flow of communication from higher authority to lower levels.

Control. Control refers to the patterns of behavior specifically prescribed by an organization, particularly: (a) the quantity of imposed control, (b) the extent to which control is distributed equally throughout the organization, and (c) the discrepancy between the actual amount of control and the degree of control desired by the typical member.

The panel rated the quantity of imposed control in the Air Force as high (H), and widely distributed (H). The degree of control was judged to exceed the comfort level of most new personnel; therefore, the discrepancy between actual and desired levels of control was deemed to be large (H).

High self-discipline, submission to authority, and accommodation to structured time demands (time consciousness) were skills identified to effectively deal with this highly controlled environment. Where control is so widely distributed, a willingness to accept personal responsibility is deemed essential also. A respect for authority and a willingness to follow orders are needed to accommodate to an environment in which the discrepancy between actual and desired amount of control is high. Individuals should also possess the moral and decision-making courage needed to express opposition when necessary.

Coordination. Coordination refers to the extent to which the tasks of the organization's members are interdependent. Relevant aspects of coordination are (a) the extent of coordination across tasks, (b) the extent to which the common goals are made clear, and (c) the extent to which this interdependence requires time-sequenced coordination.

The Air Force was judged to have a substantial amount of coordinated activity (H), with great effort directed toward ensuring that individuals understand the goals of the organization (H). Much of this coordinated activity is time-sequenced (M).

A willingness to subordinate self-interest is necessary to meet the demands involved in achieving the mission. The individual must recognize the importance of the hierarchical structure for the coordination of activity that is needed to accomplish the mission, and bring a sense of personal responsibility to the coordinated effort. In order to meet organizational goals, the individual must desire to be a team player and be sensitive to how the interdependence of jobs contributes toward achieving these goals. The time-sequenced nature of the Air Force environment calls for individuals who are patient and can work without knowing the outcome of their efforts. Moreover, it calls for individuals who trust that the organization is serving and will continue to serve their best interests.

Socialization/Integration. Socialization/Integration refers to the means by which the organization acculturates its members. Key elements are (a) the extent to which recruitment involves socialization, (b) the extent of orientation required for adaptation, (c) the rewards and punishment the organization employs to control its members, and (d) the normative expectations for appropriate orientation to tasks.

The Air Force was judged to begin socialization of an enlisted person into the organization at recruitment (H), followed by an intense orientation process (H). Maintenance of this integration is achieved by an elaborate and highly specified reward system (H). Finally, the socialization process emphasizes a highly prescriptive task orientation (H).

Responding positively to the authority figures and patriotic symbols that characterize the military, placing a great deal of trust in the military, and feeling an emotional commitment to military service help the applicant meet the demands of the recruitment process. Adapting readily to the structured lifestyle of the military, appreciating the importance of ritual, accepting the hierarchical nature of the organization, identifying with the group, and persisting in the face of adversity, and having military-related experience help to ensure a successful orientation. With highly specified reward system extant in the Air Force, the successful individual is one who obtains gratification from the positive cultural symbolism represented by the military, from the unique and challenging experience of the military lifestyle, and from the belief that military service is an admirable pursuit. A respect for authority and acceptance of low promotion opportunities are also useful characteristics in such an environment.

The motivation to work hard and to achieve task mastery, along with self-discipline, self-confidence, self-sufficiency, and a high sense of responsibility and attention to detail are necessary to adapt to the highly demanding task orientation of the Air Force. Also necessary are an internal locus of control and the ability to persist in the face of failure.

Managership. Managership refers to the administrative practices of the organization. Six major aspects of managership are identified (Yukl, 1989): (a) planning and organizing, (b) problem solving, (c) consulting and delegating, (d) monitoring operations and environment, (e) clarifying roles and objectives, and (f) informing.

The Air Force was judged to require a medium level of clarification of roles and objectives (M), and a high level of all other managership aspects -- administrative planning and organizing (H), problem solving (H), consulting and delegating (H), monitoring operations and environment (H), and informing (H). The ability to plan and organize, to solve problems, to consult and delegate, to monitor operations and

the environment, to direct others, and to supply relevant information are thus all necessary skills for successful noncommissioned officers (NCOs).

Leadership. Leadership refers to the actions used by superiors to motivate subordinates to perform. Although many models of leadership exist, two general styles of leadership have been identified (Bass, 1985): (a) Transformational Leadership, composed of individual consideration, intellectual stimulation, and charisma; and (b) Transactional Leadership, composed of contingent reward and management-by-exception.

The Air Force was judged to have some features of both types of leadership. In terms of qualities of the Transformational Leader, the panel felt that the Air Force places strong reliance on charisma for inspiring subordinates (H), but that constraints within the military environment limit the amount of individual consideration (M) and intellectual stimulation (L) that may occur. In terms of Transactional Leadership, they felt that a moderate amount of management-by-exception occurs (M), but the ability to use contingent reward is rather limited (L).

The ability to maintain a leadership image is of primary importance to the enlisted NCO. The ability to consider individual needs, the ability to apply punishment effectively, the ability to stimulate subordinates intellectually, and the ability to manipulate contingent rewards are also requisite skills.

Degree of Flux. Degree of flux refers to the amount of change that the organization is structured to accommodate under normal conditions. The focus is on change that is internal to the organization rather than change that may be imposed by outside forces (e.g., Congressional legislation). Two general classes are identified: (a) change that can be predicted (expected change), and (b) change that can be anticipated but not predicted (unexpected change).

The Air Force is characterized by a high degree of expected change (H), as manifested in frequent turnovers, transfers, and temporary duty assignments. The Air Force was rated as having a moderate amount of unexpected change (M) as well, in that it must also be ready to respond with force to sudden social and political events. Such personnel movement results in frequent changes in job definitions and procedures and often requires individuals to accept temporary assignments on short notice that may require new and unusual tasks and/or unfamiliar environments.

A high degree of personal planning skills and the ability to tolerate not seeing the direct results of one's work reduce the anxiety associated with such relocations. The ability to adapt to unexpected situations, the ability to deal effectively with ambiguity, and the ability to use general coping skills allow the individual to meet the challenge of the unexpected effectively.

Conflict Control Processes. Conflict control processes are the mechanisms, procedures, and behaviors employed to resolve conflicts and ease tension between individuals, and between individuals and demands of the organization.

The Air Force is characterized as having a great deal of conflict (H) and as expending much effort in its resolution (H). Conflict resolution efforts are not always employed nor always entirely successful, causing a considerable amount of tension from unresolved conflict (H). The degree of tension reduction, then, is considered to be low (L).

Guided aggressiveness (i.e., the appropriate channeling of aggressiveness aroused by conflict) and team player orientation are two skills that diminish conflict either by dissipating or by preventing the personal side of organizational conflict. The ability to accommodate to structural demands, a positive sense of self, and a trust in authority are each important mechanisms used to reduce or resolve conflict.

The self-disciplined individual will be able to perform effectively despite the tension associated with unresolved conflict. Being a team player and participating in physical fitness routines help to ensure that the debilitating effects of tension are minimized.

Role Specification. Role specification refers to the extent to which predefined, elaborated roles are evident in the organization. Two aspects are identified: how much role definition is required, and whether some parts of the organization require relatively more role definition than others.

The Air Force was judged to have a high degree of role definition (H), which is distributed to virtually all of its members (H). A preference for role definition and a sensitivity to constraints on role-related behavior are desirable attributes of the effective military enlistee.

Degree of Bureaucracy. Degree of bureaucracy refers to the extent to which formalized processes and patterns of behavior must undergo written documentation according to a fixed set of rules. An organization is characterized by how much bureaucracy exists and the extent to which it is distributed throughout.

The Air Force was judged as having a relatively high degree of bureaucracy (H), which is widely distributed throughout the organization (H). The ability to delay gratification helps one deal effectively with this environment. In addition, the ability to envision alternative solutions will help the individual function more effectively.

Natural Environmental Conditions. Natural environmental conditions are those environmental conditions in which the organization must exist, particularly those which present unique and challenging problems in adaptation. The Air Force was judged to often, but not exclusively, operate in life-threatening conditions (M). Relatively few Air Force assignments involve flight duty (L), but a moderate number involve isolated duty stations (M) or adverse physical conditions (M).

The ability to perform under the stress of life-threatening conditions is essential, as are immunity to airsickness when on flight duty and the ability to ward off boredom and create one's own challenges under isolated conditions. Physical fitness is also necessary should the individual's assignment involve adverse physical conditions.

Availability of Needed Resources. The availability of needed resources refers to the extent to which the needs of the organization are met. Availability of needed resources was judged as follows: personnel (H), material (M), financial (M), demand for military action (L), and technology (H). Flexibility, resourcefulness, and the creative ability to match task requirements to personnel and materials are skills that help enlisted personnel manage the personnel and material that are available. The enlisted member who seeks other than financial rewards and who is able to budget personal resources well is likely to find Air Force remuneration adequate.

Although the call to military action is infrequent, Air Force enlistees must be constantly prepared. The ability to demonstrate preparedness promotes public confidence in the Air Force's ability to perform effectively. In any event, Air Force members must be able to tolerate not seeing the results of their labor. In the high-tech-

nology environment associated with today's complex weapon systems, enlisted personnel must also be attentive to proper safety procedures, pay attention to procedural detail, and display a proper respect for property.

Relations with Social Environment. Relations with social environment refers to the manner in which the organization interacts with other organizations, both large and small, as well as with society at large. Three important aspects are (a) the extent to which both groups share a common technological structure, (b) the typical amount of interaction with non-organization people, and (c) the degree to which the organization depends on its social environment to provide approval and legitimacy of purpose.

Technologically, the Air Force was judged to have a high degree of similarity to other organizations requiring sophisticated hardware (H). Socially, the Air Force has little interaction with society at large (L), but nevertheless depends to some extent on public approval (M), and its personnel must remain integrated into the larger social system (H).

The ability to adapt to a technological environment is necessary in the technologically sophisticated Air Force; however, the successful individuals are those who are more committed to the Air Force as an institution than to their profession. The ability to muster social support and the ability to negotiate effectively are necessary when the demands of the Air Force impinge upon personal, non-military relationships such as family. A belief in the rightness of the mission and the ability to hold that belief in the face of social pressure are necessary as the military in general, and the use of military power in particular, is not always acceptable to the public. The ability to accept predefined roles, to maintain ties to society as a whole and the ability, and to muster necessary social support are also helpful.

Externally Imposed Change. Externally imposed change refers to the degree to which change in society impinges upon and results in change in the organization. Two aspects are identified: the frequency of change and the rate at which such change is implemented.

In general, the military was characterized as having a low frequency of change (L). However, in that its institutions and procedures are relatively static, change can be implemented quite quickly (H). The ability to adapt to a structured

lifestyle is necessary to meet the low amount of change. A willingness to follow orders and a trust in authority are necessary to adapt to change quickly.

Known Organization-Related Predictors and the SPOT

Subsequent to the SPOT analysis of the Air Force and the identification of relevant skills, a literature review was conducted to identify known organization-related predictors and to determine the ability of the SPOT to account for them. As a comprehensive taxonomy, the SPOT should subsume organization-related skills known to predict successful performance and increased retention and, thus, correspond to those generated by the investigators on the basis of the SPOT model.

Selection of articles for review was based on the following criteria. First, the study must deal with organization-related, non-cognitive skills, as opposed to ASVAB-related or other cognitively based skills. Second, the study must be a major study with respect to the power of the predictors scrutinized, its methodological rigor, and its generalizability to a military sample. Third, due to logistical limitations, the study must be available through reasonable methods of procurement. Finally, the review was largely limited to studies published over the past 10 years (from 1980), although several other studies deemed relevant by the investigators were also included.

Twenty articles were identified containing 48 statistically significant predictors. These predictors were then placed in the relevant organizational dimension (see Appendix B). All known predictors had counterparts to the SPOT-derived skills, thus supporting the SPOT's heuristic value.

IV. GENERATING THE SET OF BIOGRAPHICAL ITEMS

Skill-Related Behaviors

To lay the foundation for the biographical item generation process, a minimum of three behavioral indicators were identified for each attribute or ability. Within each skill, behaviors were designed to be at the same conceptual level in order to maximize the breadth of the behavioral domain covered by the set. That is, behaviors could not be subsets of broader behaviors as, for example, shifting gears would be a subset of behaviors required in driving a car. Because behaviors were generated directly from skills, there was little overlap of behavior items across skills. Behaviors across skills were at the same conceptual level as behaviors within skills except in those cases where it was necessary to change levels to adequately opera-

tionalize the skill. This resulted in a wide range of behaviors across the 333-item behavioral taxonomy (see Appendix A).

Critical Organizational Dimensions

Although each behavior in the taxonomy provides the basis for a biographical item, it was deemed more efficient in terms of both time and predictive power to judiciously select a subset of behaviors from which to generate items. To this end, a "principle of self-selection" was used as a rational means of reducing the behaviors to a more appropriate number. This principle asserts that most applicants wish to maximize the compatibility between their personal attributes and the perceived character of the organization. To accomplish this, they combine information that they possess about both the organization and themselves and make an informed judgment about the fit. In contrast, applicants are less likely to make an appropriate judgment about lesser-known aspects of the military. Evaluating applicants with regard to skills relevant to dimensions of the organization with which applicants are least familiar should prove to be the most discriminative. Moreover, there should also be a decreased probability of successfully faking responses for items derived from relatively lesser-known organizational dimensions.

Based on the pooled judgments of the investigators, critical organizational dimensions (as characterized by the requisite skills and characteristic behaviors) were divided into those likely to be known and those likely to be unknown to typical applicants.¹ These "unknown" organizational dimensions constitute the 33 "critical dimensions" (embracing 48 abilities and 232 behaviors) used for biographical item development.

Biographical Items

Successful biographical items had to meet two basic criteria: (a) Items had to be generalizable to, and under the control of, all prospective applicants, and (b)

¹ It is possible to identify these critical dimensions empirically by asking a sample of either senior organization officials or relatively new recruits to rate the organizational dimensions on "knowability" or "visibility." The rationale is that senior officers have seen the organization from enough different viewpoints to make general judgments about the organization, and new recruits, might help to identify dimensions that had been formerly unknown to them. Limited resources required the use of a more heuristic alternative, expert judgments made by outside social scientists familiar with military literature (i.e., the investigators) and then reviewed by selection specialists in the Air Force. For a more rigorous, suggested methodology, see Appendices D and E.

items had to be sensitive to potential bias with respect to the gender, race, or socioeconomic status of the applicants. To assure applicant control, items focused on events and experiences during or after high school. When no event could be found on which to base an item, a hypothetical problem scenario was developed wherein the successful resolution required the behavior in question. These "behavioral intention" items are the paper-and-pencil analogues to the more elaborate and expensive simulated work tasks of assessment centers. Hence, each of the items developed falls within either the behavioral category or the behavioral intent category, as described below.

Behavioral Items. Behavioral items are based on individual specific historical events or experiences. For example, the following item was devised to measure a respondent's ability to successfully bond to a group and the behavior of seeking out commonalities with other group members: "On how many committees have you served in which you had responsibility for social activities (a graduation activities committee, a prom committee, etc.)?" Where possible, items are designed to give the appearance of being potentially verifiable. For example, to measure an individual's general ability to respect authority, and the behavior of refraining from public criticism of authority, the item reads: "How many times in the last two years of high school do your records show that you were disciplined for disrespectful behavior?"

Behavioral Intent Items. These items focus on situations with which respondents may not have had direct experience. Respondents are asked to imagine that they are in a given situation, and are then presented several reasonable alternatives for resolving the issue at hand. For example, the following item is designed to measure a respondent's ability to delay gratification, and the behavior of displaying patience: "You arrive at a theater to see a new movie but find a long line. What would you typically do? (a) Complain, but stand in line anyway, (b) Wait in line without complaining, (c) Decide to try again at a later showing, (d) Go somewhere else."

The 174 multiple-choice items generated are scored to allow for a varying degree of credit to be awarded to various response alternatives. For any single item, credit may range from 0.0 to 1.0. Item frequencies for each critical dimension are indicated in Appendix C.

V. SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

Summary

A pool of 174 biographical items was developed within a conceptual framework derived specifically for this project, but with obvious application to other military and non-military organizations. First, the Organizational Adaptation Paradigm provided the conceptual basis for seeking to augment the ASVAB and other traditional intellectual measures with measures tapping organization adaptation skills. Second, the SPOT provided a comprehensive framework for identifying the organization-related skills that, in turn, provide the basis for a behavioral taxonomy. Third, the principle of self-selection provided the rationale for selecting the subset of skills which, because of their decreased visibility, are more likely to successfully discriminate among potential applicants. A review of both the military and the non-military literature concerning organization-related skills showed that the SPOT accounts for all the major findings of studies published during the past 10 years.

Implications

SPOT analysis is analogous to job analysis at the organizational level. Like job analysis, the SPOT analysis of the Air Force has value in other areas besides selection. It has the potential for use in training, for example, in identifying skill areas where training is needed. Similarly, it may serve as the basis for curriculum development and/or increasing the effectiveness of the socialization process. As an evaluative tool, it has the potential for development as a cultural environment checklist to quantify changes effected by organizational development strategies. It may be modified for use as a career counseling assessment tool for helping individuals decide whether to reenlist. Also, it may be refined for use as a classification tool whereby units of the organization are evaluated and individuals matched to corresponding work assignments. Finally, the SPOT may also be treated as one of many traditional job analysis techniques at the organization level, each offering an empirical method of establishing reliability and validity of ratings.

When used in developing a biographical selection instrument, the SPOT may be applied either heuristically or empirically. This paper describes a heuristic approach but also proposes a more rigorous empirical methodology (Appendix D).

Recommendations

Should the officer version of the LEAP prove to be a reliable and valid instrument for inclusion in the Air Force officer selection system, further development of an enlisted LEAP item pool and prototype instrument would seem warranted. The items developed in this study should then be administered experimentally and refined and supplemented as necessary in the development of a prototype LEAP enlisted selection instrument.

The military must continue to ensure the quality of personnel entering its ranks, especially with the current downsizing of the U.S. military force. Maximizing the selection of effective personnel with a long-term commitment to the Air Force will ultimately ensure that scarce money is well spent. The Organizational Adaptation Paradigm and the SPOT offer a promising framework for developing an enlisted biographical selection device to augment traditional military selection methods.

REFERENCES

- AL/HRMIL (in preparation). Learning Abilities Measurement Program (LAMP), phase 2: 5-year plan. Brooks AFB, TX: Manpower and Personnel Division, Human Resources Directorate, Armstrong Laboratory.
- Appel, V. H., & Grubb, P. D. (1989). Rationale and strategies underlying construction of the Leadership Effectiveness Assessment Profile: A conceptually based bioform. In P. D. Grubb (Chair), Noncognitive predictors of military effectiveness and attrition using biographical data. Symposium presented at the American Psychological Association annual convention, New Orleans.
- Appel, V. H., Grubb, P. D., Shermis, M. D., Watson, T. W., & Cole, R. W. (1990). The Leadership Effectiveness Assessment Profile (LEAP): Initial officer prototype development (AFHRL-TR-90-19, AD-B146 272L). Brooks AFB, TX: Manpower and Personnel Research Division, Air Force Human Resources Laboratory.
- Bass, B. M. (1985). Leadership and performance beyond expectation. New York: Free Press.
- Berger, F. R., Gupta, W. B., Berger, R. M., & Skinner, J. (1990). Prototypes of cognitive measures for Air Force officers: Test development and item banking (AFHRL-TP-89-73, AD-A222 670). Brooks AFB, TX: Manpower and Personnel Division, Air Force Human Resources Laboratory.
- Blau, P. M., & Scott, W. R. (1962). Formal organizations: A comparative approach. San Francisco: Chandler.
- Brush, D. H., & Schoenfeldt, L. F. (1979). Interrelationships among interests, life-history, and educational criteria. Applied Psychological Measurement, 3(2), 165-175.
- Carretta, T. R. (1987). Basic Attributes Test (BAT) system: Development of an automated test battery for pilot selection (AFHRL-TR-87-9, AD-A185 649). Brooks AFB, TX: Manpower and Personnel Division, Air Force Human Resources Laboratory.
- Dellva, W. L., Wacker, J. G., & Teas, K. (1985). Motivational antecedents: A test of predictor models. Psychological Reports, 56, 447-461.
- Eisenstadt, S. N. (1958). Bureaucracy and bureaucratization. Current Sociology, 7, 99-124.
- Etzioni, A. (1961). A comparative analysis of complex organizations. New York: Free Press.
- Gordon, C. W., & Babchuck, N. (1959). A typology of voluntary associations. American Sociological Review, 24(1), 22-29.
- Helmreich, R. L., Sawin, L. L., & Carsrud, A. L. (1986). The honeymoon effect in job performance: Temporal increases in the predictive power of achievement motivation. Journal of Applied Psychology, 71(2), 185-188.

- Helmreich, R. L., & Spence, J. T. (1978). The Work and Family Orientation questionnaire: An objective instrument to assess components of achievement motivation and attitudes toward family and career. ISAS Catalog of Selected Documents in Psychology, 8, 35.
- Hughes, E. C. (1952). Memorandum on going concerns. Society for Applied Anthropology (unpublished paper).
- Indik, B. P. (1968). The scope of the problem and some suggestions toward a solution. In B. P. Indik & F. K. Berrien (Eds.), People, groups, and organizations. New York: Teachers College Press.
- Katz, D., & Kahn, R. L. (1976). The social psychology of organizations. New York: John Wiley & Sons.
- King, M., Murray, M. A., & Atkinson, T. (1982). Background, personality, job characteristics, and Satisfaction with work in a national sample. Human Relations, 35(2), 119-133.
- Love, K. G. & O'Hara, K. (1987). Predicting job performance of youth trainees under a job training partnership ACT program (JTPA): Criterion validation of a behavior-based measure of work maturity. Personnel Psychology, 40, 323-340.
- McDaniel, M. A., Schmidt, F. L., & Hunter, J. E. (1988). Job experience correlates of job performance. Journal of Applied Psychology, 73(2), 327-330.
- Means, B., & Perelman, L. S. (1984). The development of the educational and biographical information survey. Alexandria, VA: Human Resources Research Organization.
- Miller, J. G. (1965). Living systems: Cross-level hypotheses. Behavioral Science, 10 (4), 380-411.
- Mintzberg, H. (1986). The nature of managerial work. New York: Harper & Row.
- Mossholder, K. W., Bedeian, A. G., & Armenakis, A. A. (1981). Role perceptions, satisfaction, and performance: Moderating effects of self-esteem and organizational level. Organizational Behavior and Human Performance, 28, 224-234.
- Mowday, R. T., Porter, L. W., & Steers, R. M. (1982). Employee-organization linkages: The psychology of commitment, absenteeism, and turnover. New York: Academic Press.
- Murray, H. A. (1938). Explorations in personality. New York: Oxford University Press.
- Parsons, T. (1956). Suggestions for a sociological approach to the theory of organizations. Administrative Science Quarterly, 1, 63-85.
- Scott, F. G. (1959). Action theory and research in social organization. American Journal of Sociology, 64(4), 386-395.

- Sells, S. B. (1968). General theoretical problems related to organizational taxonomy: A model solution. In B. P. Indik & F. K. Berrien (Eds.), People, groups, and organizations. New York: Teachers College Press.
- Sherer, M., Maddux, J. E., Mercandante, B., Prentice-Dunn, S., Jacobs, B., & Rogers, R. W. (1982). The self-efficacy scale: construction and validation. Psychological Reports, 51, 663-671.
- Siem, F. M. (1990). Predictive validity of an automated personality inventory for Air Force pilot selection (AFHRL-TP-90-55, AD-A226 731). Brooks AFB, TX: Manpower and Personnel Division, Air Force Human Resources Laboratory.
- Van Riper, P. P. (1966). Organizations: Basic issues and a proposed typology. In R. Bowers (Ed.), Studies on behavior in organizations. Athens, Georgia: University of Georgia Press.
- Walker, C. & White, L. (1988). The U.S. Army's Assessment of Background and Life Experiences (ABLE). Alexandria, VA: U.S. Army Research Institute, Selection and Classification Area, FR-PRD-84-3.
- Wiley, L. N. (1974). Across-time prediction of the performance of airman administrators and mechanics (AFHRL-TR-74-53, AD-786 409). Lackland AFB, TX: Air Force Human Resources Laboratory.
- Yellen, T. M. I. (1975). Validation of the delinquent behavior inventory as a predictor of basic training attrition. San Diego, CA: Navy Personnel Research and Development Center, NPRDC-TR-76-3.
- Yukl, G. A. (1989). Leadership in organizations. New Jersey: Prentice-Hall, Inc.

**APPENDIX A: STRUCTURAL AND PROCESS ORGANIZATIONAL
TAXONOMY (SPOT) MODEL OF AIR FORCE
PERFORMANCE AND RETENTION^a**

Key: * = Organizational dimensions less well known to the typical enlisted applicant
• = Skills among the original list generated

Organizational Dimension
<u>Related Skill</u>
Behavioral Indicator

I. COMMUNICATION

A. Quantity of information exchanged (Low)

•1. Interpersonal competence

- a. Establishes positive relationships with peers, those above and below his/her status.
- b. Maintains positive relationships with co-workers.
- c. Works collaboratively.
- d. Stimulates the full contribution of co-workers to team effort.
- e. Acknowledges the contributions of others.

B. Emphasis on task rather than socio-emotional (High)

•1. Sociability

- a. Expresses satisfaction from participation in group activities.
- b. Makes others at ease in group situations.
- c. Enters group situations frequently.

***C. Tolerance of improper communication (Low)**

•1. Sensitivity to constraints on communication

- a. Monitors the environment for cues for appropriate communication.
- b. Communicates information about work-related problems, censoring irrelevant information.
- c. Chooses a level of communication appropriate to situational demands.

***D. Degree of unstructured/open communication (Low)**

1. Ability to express contrary viewpoints

- a. Communicates disagreement appropriately.
- b. Articulates ideas for alternative solutions.
- c. Monitors others' reactions to ensure comprehension.

^a A model showing organizational dimensions, the level at which they apply to the Air Force, and the corresponding personal abilities requisite for successful functioning within such a setting.

II. CONTROL

A. Quantity of imposed control (High)

- 1. Self-discipline
 - a. Controls impulsive behaviors.
 - b. Imposes self-inflicted penalties for transgressions.
 - c. Controls behaviors deemed inappropriate by the Air Force.
- 2. Submission to authority
 - a. Follows the spirit of directions by superiors.
 - b. Subordinates personal needs/desires willingly to demands of authority.
 - c. Encourages others to comply with demands of authority.
- 3. Time consciousness
 - a. Arrives as required on time.
 - b. Budgets time according to prioritized demands.
 - c. Anticipates future demands on time and plans accordingly.

B. Extent to which control is distributed equally (High)

- 1. Acceptance of responsibility
 - a. Completes assigned tasks.
 - b. Is committed personally to successful completion of tasks.
 - c. Holds self accountable for assigned task outcomes.

*C. Actual/desired discrepancy (High)

- 1. Respect for authority
 - a. Refrains from public criticism of authority.
 - b. Refrains from desecrating authority symbols.
 - c. Obeys regulations even when not being watched.
- 2. Willingness to follow orders
 - a. Asks for more information if orders are not clear.
 - b. Carries out assigned tasks with enthusiasm.
 - c. Readjusts priorities on the basis of new commands.
- 3. Moral courage
 - a. Evaluates decisions from a moral standpoint.
 - b. Voices opposition to decisions that radically depart from accepted moral standards.
 - c. Conforms to accepted moral standards.
- 4. Decision-making courage
 - a. Carries out unpopular but correct decisions despite others' opposition.
 - b. Considers decisions that potentially depart from majority agreement.
 - c. Searches for appropriate criteria to evaluate alternative decisions.

III. COORDINATION

*A. Extent of coordinated activity (High)

- 1. Subordination of self to mission
 - a. Places higher priority on the demands of the military profession than on personal interests.
 - b. Accepts required assignments.
 - c. Adopts goals of the organization.
- 2. Recognition of the importance of hierarchical structure to achieve mission
 - a. Arranges work groups into leaders and followers.
 - b. Seeks out work groups with hierarchical authority structure.
 - c. Expresses discomfort in absence of specified task leader.
- 3. Sense of responsibility
 - a. Completes task on own initiative.
 - b. Encourages others to complete assigned task.
 - c. Demonstrates understanding of one's area of responsibility.

*B. Extent to which coordinated efforts are clarified (High)

- 1. Team player
 - a. Stimulates others to work as a team.
 - b. Finds ways for all team members to participate.
 - c. Expresses satisfaction for the whole group at successful task completion.
- 2. Awareness of interdependence of jobs to success of mission
 - a. Demonstrates understanding of relationship of parts to whole.
 - b. Asks for feedback from other team members.
 - c. Seeks information about the interrelation of tasks.

*C. Extent of time-sequenced coordinated activity (Med.)

- 1. Delay of gratification
 - a. Displays patience.
 - b. Continues work in absence of knowledge of outcome.
- 2. Trust in institution
 - a. Accepts the logic of work arrangements.
 - b. Expresses confidence that the military will "take care of its own."
 - c. Expresses confidence that the military will deal equitably with him/her.
 - d. Expresses confidence that the military will help fulfill personal goals.

IV. SOCIALIZATION/INTEGRATION

A. Extent to which successful recruitment involves socialization (High)

- 1. Attachment to authority figures
 - a. Nurtures relationships with authority figures.
 - b. Seeks out liaison roles between leaders and followers.
 - c. Seeks out the "assistant" position.

- 2. Tendency to attach importance to symbols
 - a. Derives satisfaction from wearing a uniform.
 - b. Expresses view that military employment is a symbol of success.
 - c. Displays personal investment in symbols.
- 3. Trust in the institution
 - a. Accepts the logic of work arrangements.
 - b. Expresses confidence that the Air Force will "take care of its own."
 - c. Expresses confidence that the Air Force will deal equitably with him/her.
- 4. Affective commitment
 - a. Finds participation in the organization emotionally satisfying.
 - b. Is dedicated to the organization and its mission.
 - c. Values membership in the organization.
- *B. **Extent of orientation required for successful adaptation (High)**
 - 1. Ability to adapt to a structured lifestyle
 - a. Structures free time.
 - b. Organizes activities into routines.
 - c. Adheres to daily regimen willingly.
 - 2. Recognition of the importance of ritual
 - a. Places importance on tradition.
 - b. Observes patriotic rituals.
 - c. Seeks out environments that require formalized patterns of behavior.
 - 3. Awareness of hierarchical aspects of the organization
 - a. Seeks out status information of organization members.
 - b. Recognizes authority structure quickly.
 - c. Recognizes behaviors appropriate to differing hierarchical levels
 - 4. Ability to successfully bond to group
 - a. Recognizes group boundaries.
 - b. Seeks out commonalties with other group members.
 - c. Modifies personal behavior as appropriate to group needs.
 - 5. Persistence in face of adversity
 - a. Concentrates on task rather than personal feelings.
 - b. Uses adversity as learning opportunity.
 - c. Uses adversity as a personal challenge.
 - 6. Prior military-related experience (prior job experience)
 - a. Participates in military-like organizations.
 - b. Seeks employment-like activities.
 - c. Seeks out interdependent team or group activities.

***C. Degree to which reward process involves socialization (High)**

•1. Respect for authority

- a. Refrains from public criticism of authority.
- b. Refrains from desecrating authority symbols.
- c. Obeys regulations even when not being watched.

•2. Acceptance of low promotion opportunities

- a. Maintains work commitment in the absence of high promotional opportunities.
- b. Attaches greater importance to job satisfaction than to promotion.
- c. Attaches greater importance to the esteem of teammates than to promotion.
- d. Seeks advice or alternative solutions after non-promotion.

•3. Gratification from cultural symbols of status

- a. Places importance on symbolic nature of possessions.
- b. Associates with status symbols.
- c. Places value on symbolic recognition of achievement.

•4. Satisfaction from experientially derived status

- a. Values experience as a status symbol.
- b. Seeks experiences to build status.
- c. Relates experiences to others as a means of achieving status.

•5. Perception of military as a respectable profession

- a. Discusses military news with others.
- b. Expresses values which agree with the Air Force way of life.
- c. Seeks out military literature.
- d. Expresses pride in military achievements.
- e. Expresses view that military employment is a symbol of success.

D. Extent to which task orientation integral to socialization (High)

•1. Motivation to work hard

- a. Works at full capacity without supervision.
- b. Seeks work opportunities.
- c. Expend effort willingly.

•2. Mastery

- a. Seeks challenging assignments.
- b. Views challenging work situation as opportunity to learn.
- c. Expresses dissatisfaction when high standards are not met.

•3. Self-discipline

- a. Performs onerous duties without supervision.
- b. Performs to a personal standard more exacting than organizational standard.
- c. Accepts personal discomfort without complaint to complete task.

- 4. Self-confidence
 - a. Approaches novel task with determination.
 - b. Expresses assurance of personal competence.
 - c. Performs potentially dangerous or anxiety-producing tasks without a decline in performance.
- 5. Self-sufficiency
 - a. Performs difficult tasks without requesting unnecessary assistance.
 - b. Pursues relevant job knowledge independently.
 - c. Works well in isolation.
 - d. Equips himself/herself to handle most emergencies.
 - e. Demonstrates independence in task completion.
 - f. Seeks all possible alternative solutions to task before requesting outside help.
 - g. Expresses confidence in his/her ability to handle any job-related problems.
 - h. Responds immediately to changes in task requirements.
- 6. Sense of responsibility
 - a. Offers to assist others upon completion of own task.
 - b. Prioritizes task elements to increase performance.
 - c. Informs supervisor of suspected errors in instructions or regulations.
- 7. Attention to detail
 - a. Rechecks own work before considering task complete.
 - b. Refers back to instructions to ensure that correct procedure is followed.
 - c. Conscientiously completes routine tasks.
- 8. Internal locus of control
 - a. Performs relevant task-related activities in the absence of specific instructions.
 - b. Admits errors readily.
 - c. Seeks opportunities for job-related self-improvement.
- 9. Persistence after failure
 - a. Develops alternative solutions after task failure.
 - b. Seeks advice after task failure.
 - c. Examines previous actions to determine cause of failure.

V. MANAGERSHIP

*A. Planning and organizing (High)

•1. Ability to plan and organize

- a. Sets long-range objectives and strategies for meeting changes in external environment.
- b. Identifies action steps needed to carry out projects.
- c. Allocates resources among competing activities in accordance with priorities.
- d. Determines how to improve efficiency, productivity, and internal coordination.
- e. Visualizes task sequences.
- f. Coordinates plans with other relevant people.
- g. Monitors time constraints bearing on task/project.

*B. Problem solving (High)

•1. Ability to solve problems

- a. Identifies work-related problems.
- b. Systematically analyzes problems to identify causes and final solutions.
- c. Acts decisively to implement solutions.
- d. Responds immediately to crisis situations with problem solving.

*C. Consulting and delegating (High)

•1. Ability to consult and delegate

- a. Invites subordinate participation before making changes/decisions that affect them.
- b. Encourages ideas and suggestions from subordinates for improving organizational effectiveness.
- c. Incorporates subordinate input in decision making.
- d. Gives others discretion as merited in carrying out work or handling problems.

*D. Monitoring operations and environment (High)

•1. Ability to monitor operations and environment

- a. Gathers information about progress of work and its quality.
- b. Gathers information about the success or failure of overall project effort.
- c. Gathers information about the contribution of selected individuals.
- d. Determines the needs of clients or users.
- e. Scans the external environment to detect both threats and opportunities.
- f. Ensures information gathered is correct and complete.

*E. Clarifying roles and objectives (Med.)

•1. Ability to direct others

- a. Assigns tasks.
- b. Provides direction in how the work should be done.
- c. Communicates job responsibilities, objectives, performance expectation, and deadlines clearly.

***F. Informing (High)**

•1. Ability to supply relevant information

- a. Disseminates relevant information about decisions, plans, and activities.
- b. Documents task accomplishments as required.
- c. Answers requests for technical information.
- d. Promotes the reputation of the organizational unit by publicizing its accomplishments.

VI. LEADERSHIP

***A. Individualized consideration (Med.)**

1. Ability to consider individual needs

- a. Acts as a mentor who instructs, advises, and supports.
- b. Provides individualized feedback.
- c. Encourages joint problem solving.
- d. Encourages two-way exchange of views.
- e. Listens to ideas/problems of subordinates.
- f. Assesses subordinate readiness for tasks.
- g. Allows subordinates the choice of appropriate task methodology.
- h. Encourages others in taking initiative.
- i. Assigns tasks based on individual needs/situations.

***B. Intellectual stimulation (Low)**

1. Ability to intellectually stimulate others

- a. Provides subordinates with challenging problems to solve.
- b. Provides novel perspective on problems.
- c. Simplifies tasks perceived as complex.
- d. Converses with others on a diverse range of topics.

***C. Charisma (High)**

1. Ability to maintain leadership image

- a. Inspires followers to action.
- b. Develops and maintains subordinates' confidence/respect in leaders capacity to lead.
- c. Develops and maintains subordinates' commitment and loyalty to the causes he or she believes in.
- d. Takes actions to reduce the group's tension in stressful situations.
- e. Inspires people to push past their perceived ability by force of personality.

***D. Contingent reward (Low)**

1. Ability to manipulate contingent rewards

- a. Monitors subordinate's performance.
- b. Compensates subordinates proportional to their achievements.
- c. Identifies available resources for use as rewards.

***E. Management-by-exception (Med.)**

1. Ability to apply punishment effectively

- a. Takes corrective action after subordinate fails to meet objectives.
- b. Clarifies unfulfilled objectives so that they are reached in the future.
- c. Punishes subordinates failing to meet objectives without cause.

VII. DEGREE OF FLUX

*A. Expected Flux (High)

1. Ability to tolerate non-closure
 - a. Chooses open-ended tasks.
 - b. Derives satisfaction from work despite not being able to see the results.
 - c. Maintains productivity in the absence of visible results.
2. Personal planning skills
 - a. Seeks out necessary information to achieve personal goals.
 - b. Identifies personal objectives.
 - c. Maintains records of ongoing personal projects and plans.
 - d. Seeks out resources needed to cope in new environments.

*B. Unexpected Flux (Med.)

1. Adaptability to unexpected situational contingencies
 - a. Revises task priorities to meet unexpected circumstances.
 - b. Expresses no discomfort with continuously fluctuating situational demands.
 - c. Completes interrupted tasks.
2. Ability to deal effectively with ambiguity
 - a. Initiates action to clarify ambiguous environments.
 - b. Seeks information relevant to resolving competing demands.
 - c. Distinguishes clearly between lack of understanding and ambiguous instructions.
3. Coping skills
 - a. Refrains from withdrawing from ambiguous situations.
 - b. Initiates action to reduce stress associated with surprise.
 - c. Maintains or increases productivity under crisis conditions.

VIII. CONFLICT CONTROL PROCESSES

*A. Amount of conflict (High)

- 1. Guided aggressiveness/appropriate channeling of energy
 - a. Participates in activities for the purpose of relieving stress.
 - b. Refrains from inappropriate use of aggression.
 - c. Seeks ways to reduce frustration levels.
- 2. Team player
 - a. Displays consideration of others' feelings.
 - b. Stimulates others to work as a team.
 - c. Finds ways for all team members to participate.
 - d. Expresses satisfaction for the whole group at successful task completion.

***B. Amount of conflict reduction/resolution (High)**

1. Accommodation to structural demands

- a. Generates alternative solutions to conflict.
- b. Seeks information about source of conflict.
- c. Works actively with others to reduce conflict.
- d. Identifies future or potential sources of conflict.

•2. Self-esteem

- a. Values positive self attributes.
- b. Compensates for personal shortcomings.
- c. Maintains positive emotional state in adverse circumstances.

•3. Trust in authority

- a. Expresses confidence in the decisions of authority figures.
- b. Encourages others to support decisions of authority.
- c. Takes personal risks as required by authority.

C. Amount of tension from unresolved conflict (High)

•1. Self-discipline

- a. Performs onerous duties without supervision.
- b. Performs to a personal standard more exacting than organizational standard.
- c. Accepts personal discomfort without complaint to complete task.

***D. Amount of tension reduction (Low)**

•1. Team player

- a. Displays consideration of others' feelings.
- b. Stimulates others to work as a team.
- c. Finds ways for all team members to participate.
- d. Expresses satisfaction for the whole group at successful task completion.

•2. Physical fitness

- a. Participates regularly in some form of physical activity to maintain conditioning.
- b. Chooses and eats nutritious foods.
- c. Gets adequate rest.
- d. Assigns high priority to maintaining physical fitness despite competing demands for time.
- e. Exhibits signs of being physically fit.

IX. ROLE SPECIFICATION

***A. Degree of role definition (High)**

1. Preference for role definition

- a. Expresses discomfort in unorganized activity.
- b. Seeks to clarify ambiguous relationships.
- c. Seeks role-related information from others.

***B. Distribution of roles (High)**

- 1. Sensitivity to constraints on behavior
 - a. Monitors the environment for cues for appropriate behavior.
 - b. Adapts behavior to situational demands.
 - c. Conveys normative behavior to others.

X DEGREE OF BUREAUCRACY

A. Amount (High)

- 1. Ability to delay gratification
 - a. Displays patience.
 - b. Continues work in absence of knowledge of outcome.

B. Distribution (High)

- 2. Ability to envision alternative solutions
 - a. Suggests alternatives to current or proposed courses of action.
 - b. Invents new procedures.
 - c. Adapts available equipment to new uses.

XI. NATURAL ENVIRONMENTAL CONDITIONS

A. Life-threatening conditions (Med.)

- 1. Ability to perform under stress
 - a. Completes task despite apprehension.
 - b. Activates personal stress control techniques as appropriate.
 - c. Displays concern for others' welfare in high stress environment.

B. Flight conditions (Low)

- 1. Airsickness immunity
 - a. Does not express anxiety about flight or air sickness.
 - b. Does not experience motion sickness.

***C. Isolated conditions (Med.)**

- 1. Ability to ward off boredom
 - a. Actively pursues one or more hobbies.
 - b. Engages in mental puzzles, games and activities.
 - c. Desires active programs of boredom reduction.
 - d. Seeks new experiences.
 - e. Performs repetitious tasks effectively for long periods of time.
 - f. Finds interesting aspects to mundane tasks.
 - g. Deals effectively with frustration resulting from tedium.
- 2. Ability to create own challenge/fun
 - a. Redefines tasks as personal challenge.
 - b. Develops personal expectations above and beyond organizational expectations.
 - c. Organizes activities to pursue areas of interest.
 - d. Devises personal program of activity to fill free time.
 - e. Chooses hobbies/activities that are personally challenging.
 - f. Actively seeks challenging work tasks.

D. Adverse physical conditions (Med.)

•1. Physical fitness

- a. Participates regularly in some form of physical activity to maintain conditioning.
- b. Chooses and eats nutritious foods.
- c. Gets adequate rest.
- d. Assigns high priority to physical fitness despite competing demands for time.

XII. AVAILABILITY OF NEEDED RESOURCES

***A. Personnel (High)**

1. Flexibility

- a. Modifies schedule according to organizational demands.
- b. Accepts extra tasks willingly.
- c. Accepts training as required by task demands.
- d. Changes to a different task on short notice as necessary.

•2. Resourcefulness

- a. Creatively prioritizes work to be done to maximize completion of assigned tasks.
- b. Seeks more efficient ways to perform tasks.
- c. Works extra hours willingly.

3. Ability to match task requirements with available personnel

- a. Identifies common task elements.
- b. Identifies personnel strengths and weaknesses.
- c. Identifies criteria for a successful match.

***B. Material (Med.)**

•1. Resourcefulness

- a. Uses available material creatively to replace unavailable materials.
- b. Redesigns/restructures task to make best use of available material.
- c. Uses alternative materials to replace unavailable materials.

2. Ability to match task requirements with available material

- a. Identifies available material.
- b. Identifies common task requirements.
- c. Identifies criteria for a successful match.

3. Creativity

- a. Makes suggestions for time- or labor-saving equipment or procedures.
- b. Designs labor-saving equipment or procedures.
- c. Designs systems to implement new task requirements.

***C. Financial (Med.)**

•1. Desire for sources of compensation other than financial

- a. Expresses long-term plans in more than financial terms.
- b. Expresses career objectives in more than financial terms.
- c. Recognizes military pay as sufficient to meet needs.

2. Ability to budget personal resources
 - a. Maintains a savings account.
 - b. Balances his/her checkbook regularly.
 - c. Maintains eligibility for a good credit rating.

D. Demand for military action (Low)

1. Ability to tolerate non-closure
 - a. Chooses open-ended tasks.
 - b. Derives satisfaction from work despite not being able to see the results.
 - c. Maintains productivity in the absence of visible results.
2. Preparedness
 - a. Maintains/monitors equipment for emergencies.
 - b. Monitors environment for information to ensure success of future activities.
 - c. Ensures resources are available for contingencies.
3. Ability to demonstrate preparedness
 - a. Promotes confidence in one's ability to perform task.
 - b. Promotes confidence in the organization's ability to perform effectively.
 - c. Develops public relations programs.

***E. Technology (High)**

1. Attentiveness to safety
 - a. Wears protective equipment where called for in hazardous situations.
 - b. Reads safety instructions for equipment routinely.
 - c. Reports safety hazards.
 - d. Maintains safety equipment.
 - e. Prepares for emergency contingencies.
- 2. Attention to detail
 - a. Modifies procedures to prevent damage to equipment.
 - b. Anticipates non-routine equipment requirements.
 - c. Indicates procedure to deal with non-routine equipment requirements.
3. Respect for property
 - a. Performs preventive maintenance.
 - b. Secures equipment after task completion.
 - c. Selects and uses the proper equipment for task completion.

XIII. RELATIONS WITH SOCIAL ENVIRONMENT

A. Degree of technological similarity (High)

1. Commitment to institution over profession
 - a. Expresses career plans in other than professional terms.
 - b. Expresses long-term goals in other than professional terms.
 - c. Expresses willingness to accept training in other than desired career field.

2. Ability to adapt to technological environment
 - a. Performs routine maintenance on a technologically advanced piece of equipment.
 - b. Dismantles equipment out of curiosity.
 - c. Expresses no discomfort with using computers/calculators.
- B. **Amount of interaction with non-organization people (Low)**
 - 1. Ability to muster social support
 - a. Involves significant others in important job-related decisions.
 - b. Informs others in a timely manner of job-related factors that will impact them.
 - c. Motivates others to accommodate to organizational goals.
 2. Ability to negotiate
 - a. Pursues problem-solving approach to conflict.
 - b. Resolves disputes through give and take.
 - c. Actively seeks to lower tension in conflict situations.
- C. **Concern with social environment (public acceptance) (Med.)**
 1. Ability to hold beliefs in the face of social pressure
 - a. Expresses no discomfort in expressing an unpopular belief.
 - b. Expresses greater concern with personal integrity than with popularity.
 - c. Unafraid of situations in which unpopular personal beliefs may create tension.
- D. **Concern with social environment (integration of Air Force into larger social system) (High)**
 - 1. Ability to muster social support
 - a. Involves significant others in important job-related decisions.
 - b. Informs others in a timely manner of job-related factors that will impact them.
 - c. Motivates others to accommodate to organizational goals.
 2. Ability to accept predefined roles
 - a. Expresses no discomfort in situations in which a limited range of behaviors are expected.
 - b. Chooses situations in which there is limited autonomy.
 - c. Relies on structural situational cues to determine appropriate behavior.

XIV. EXTERNALLY IMPOSED CHANGE

- *A. **Frequency of change (Low)**
 - 1. Ability to adapt to structured lifestyle
 - a. Structures free time.
 - b. Organizes activities into routines.
 - c. Adheres to daily regimen willingly.

***B. Rate of implementation of change (High)**

•1. Willingness to follow orders

- a. Asks for more information if orders are not clear.
- b. Carries out assigned tasks with enthusiasm.
- c. Readjusts priorities on the basis of new commands.

•2. Trust in authority

- a. Expresses confidence in the decisions of authority figures.
- b. Encourages others to support decisions of authority.
- c. Takes personal risks as required by authority.

**APPENDIX B: RESEARCH PROVIDING SUPPORTIVE EVIDENCE OF THE PREDICTIVE
VALUE OF SPOT VARIABLES FOR PERFORMANCE OR RETENTION**

Organizational Dimension
<u>Related Skill</u>
Organization-Related Predictor

I. COMMUNICATION

A. Quantity of information exchanged

1. Interpersonal competence

Shows even temper, is courteous (Wiley, 1974)

Interpersonal skills (sociability) (Love & O'Hara, 1987)

B. Emphasis on task rather than socio-emotional

1. Sociability

Shows even temper, is courteous (Wiley, 1974)

Interpersonal skills (sociability) (Love & O'Hara, 1987)

Immaturity (Yellen, 1975)

C. Tolerance of improper communication

1. Sensitivity to constraints on communication

Shows even temper, is courteous (Wiley, 1974)

D. Degree of unstructured/open communication

1. Ability to express contrary viewpoints

II. CONTROL

A. Quantity of imposed control

1. Self-discipline

Shows even temper, is courteous (Wiley, 1974)

Time consciousness (Love & O'Hara, 1987)

Alcohol/drug use (Means & Perelman, 1984)

2. Submission to authority

Shows even temper, is courteous (Wiley, 1974)

Disputes with school officials (Means & Perelman, 1984)

Acceptance of authority (Means & Perelman, 1984)

Absenteeism/tardiness (Means & Perelman, 1984)

3. Time consciousness

B. Extent to which control is distributed equally

1. Acceptance of responsibility

Shows even temper, is courteous (Wiley, 1974)

Dependability (Walker & White, 1988)

C. Actual/desired discrepancy

1. Respect for authority

Trouble with/attitudes toward teachers (Means & Perelman, 1984)

Anti-establishment attitudes (Yellen, 1975)

Shows eagerness to cooperate with superiors (Wiley, 1974)

2. Willingness to follow orders

Shows even temper, is courteous (Wiley, 1974)

Feelings that teachers hassle me (Means & Perelman, 1984)

Rebellious attitude toward education (Yellen, 1975)

3. Moral courage

4. Decision-making courage

Non-delinquency (Walker & White, 1988)

III. COORDINATION

A. Extent of coordinated activity

1. Subordination of self to mission

Shows even temper, is courteous (Wiley, 1974)

2. Recognition of the importance of hierarchical structure to achieve mission

3. Sense of responsibility

Shows even temper, is courteous (Wiley, 1974)

B. Extent to which coordinated efforts are clarified

1. Team player

Cooperativeness (Walker & White, 1988)

Need for belongingness (Murray, 1938)

2. Awareness of interdependence of jobs to success of mission

Shows even temper, is courteous (Wiley, 1974)

C. Extent of time-sequenced coordinated activity

1. Delay of gratification

2. Trust in institution

IV. SOCIALIZATION/INTEGRATION

A. Extent to which successful recruitment involves socialization

1. Attachment to authority figures

2. Tendency to attach to symbols

3. Trust in the institution

Traditional values (Walker & White, 1988)

**A. Extent to which successful recruitment involves socialization
(continued)**

4. Affective commitment

Mowday, Porter, & Steers (1982)

B. Extent of orientation required for successful adaptation

1. Ability to adapt to a structured lifestyle

Shows even temper, is courteous (Wiley, 1974)

Adjustment to the school environment (Means & Perelman, 1984)

Escape (Yellen, 1975)

2. Recognition of the importance of ritual

3. Awareness of hierarchical aspects of the organization

4. Ability to successfully bond to group

Social Adjustment (Means & Perelman, 1984)

5. Persistence in face of adversity

Persistence (Means & Perelman, 1984)

6. Prior military-related experience (prior job experience)

Satisfaction/length of main civilian employment (Means & Perelman, 1984)

C. Degree to which reward process involves socialization

1. Respect for authority

2. Acceptance of low promotion opportunities

McDaniel, Schmidt, & Hunter (1988)

3. Gratification from cultural symbols of status

4. Satisfaction from experientially derived status

Spends considerable off-duty time keeping up with matters relating to work (Wiley, 1974)

5. Perception of military as a respectable profession

D. Extent to which task orientation is integral to socialization

1. Motivation to work hard

Wiley (1974)

Lack of achievement motivation (Yellen, 1975)

Work motivation (work and mastery) (Helmreich & Spence, 1978;

Helmreich, Sawin, & Carsrud, 1986)

2. Mastery

Wiley (1974)

Sherer, et al. (1982)

Work orientation (Helmreich & Spence, 1978; Walker & White, 1988)

**D. Extent to which task orientation is integral to socialization
(continued)**

3. **Self-discipline**
Wiley (1974)
4. **Self-confidence**
Wiley (1974)
Self-esteem (Mossholder, Bedeian, & Armenakis, 1981; Walker & White, 1988)
5. **Self-sufficiency**
Wiley (1974)
6. **Sense of responsibility**
Wiley (1974)
7. **Attention to detail**
Wiley (1974)
8. **Internal locus of control**
Dellva, Wacker, & Teas (1985)
King, Murray, & Atkinson (1982)
Walker & White (1988)
9. **Persistence after failure**
Thoughts of quitting school. Motivation level. School achievement.
(Means & Perelman, 1984)
Energy level. Work orientation. Conscientiousness. (Walker & White, 1988)

V. MANAGERSHIP

- A. **Planning and organizing**
 1. **Ability to plan and organize**
Wiley (1974)
- B. **Problem solving**
 1. **Ability to solve problems**
Wiley (1974)
- C. **Consulting and delegating**
 1. **Ability to consult and delegate**
Wiley (1974)
- D. **Monitoring operations and environment**
 1. **Ability to monitor operations and environment**
Wiley (1974)
- E. **Clarifying roles and objectives**
 1. **Ability to direct others**
Wiley (1974)

F. Informing

1. Ability to supply relevant information

VI. LEADERSHIP

A. Individualized consideration

1. Ability to consider individual needs
Wiley (1974)

B. Intellectual stimulation

1. Ability to intellectually stimulate others
Wiley (1974)
Seeks competence (Walker & White, 1988)

C. Charisma

1. Ability to maintain leadership image
Wiley (1974)
Social dominance (Walker & White, 1988)

D. Contingent reward

1. Ability to manipulate contingent rewards
Wiley (1974)

E. Management-by-exception

1. Ability to apply punishment effectively

VII. DEGREE OF FLUX

A. Expected Flux

1. Ability to tolerate non-closure
2. Personal planning skills

B. Unexpected Flux

1. Adaptability to unexpected situational contingencies
2. Ability to deal effectively with ambiguity
3. Coping skills

VIII. CONFLICT CONTROL PROCESSES

A. Amount of conflict

1. Guided aggressiveness/appropriate channeling of energy
Non-delinquency (Walker & White, 1988)
Style - aggressiveness (Brush & Schoenfeldt, 1979)
Resourceful in meeting emergencies; finds ways to overcome unexpected situations (Wiley, 1974)

- A. Amount of conflict (continued)
 - 2. Team player
- B. Amount of conflict reduction/resolution
 - 1. Accommodation to structural demands
 - 2. Self-esteem
Walker & White (1988)
 - 3. Trust in authority
Emotional stability (Walker & White, 1988)
- C. Amount of tension from unresolved conflict
 - 1. Self-discipline
Wiley (1974)
- D. Amount of tension reduction
 - 1. Team player
 - 2. Physical fitness
Wiley (1974)
Physical condition (Walker & White, 1988)

IX. ROLE SPECIFICATION

- A. Degree of role definition
 - 1. Preference for role definition
- B. Distribution of roles
 - 1. Sensitivity to constraints on behavior

X. DEGREE OF BUREAUCRACY

- A. Amount
 - 1. Ability to delay gratification
- B. Distribution
 - 1. Ability to envision alternative solutions
Wiley (1974)

XI. NATURAL ENVIRONMENTAL CONDITIONS

- A. Life-threatening conditions
 - 1. Ability to perform under stress
- B. Flight conditions
 - 1. Airsickness immunity

C. Isolated conditions

1. Ability to ward off boredom
2. Ability to create own challenge/fun

D. Adverse physical conditions

1. Physical fitness

XII. AVAILABILITY OF NEEDED RESOURCES

A. Personnel

1. Flexibility
2. Resourcefulness
3. Ability to match task requirements with available personnel

B. Material

1. Resourcefulness
2. Ability to match task requirements with available material
3. Creativity

C. Financial

1. Desire for sources of compensation other than financial
2. Ability to budget personal resources

D. Demand for military action

1. Ability to tolerate non-closure
2. Preparedness
3. Ability to demonstrate preparedness

E. Technology

1. Attentiveness to safety
2. Attention to detail
3. Respect for property

XIII. RELATIONS WITH SOCIAL ENVIRONMENT

A. Degree of technological similarity

1. Commitment to institution over profession
2. Ability to adapt to technological environment

- B. Amount of interaction with non-organization people
 - 1. Ability to muster social support
 - 2. Ability to negotiate
- C. Concern with social environment (public acceptance)
 - 1. Ability to hold beliefs in the face of social pressure
- D. Concern with social environment (integration of Air Force into larger social system)
 - 1. Ability to muster social support
 - 2. Ability to accept predefined roles

XIV. EXTERNALLY IMPOSED CHANGE

- A. Frequency of change
 - 1. Ability to adapt to structured lifestyle
- B. Rate of implementation of change
 - 1. Willingness to follow orders
 - 2. Trust in authority

APPENDIX C: ENLISTED LEAP ITEM FREQUENCY

Key: * = Organizational Dimensions less well known to the typical enlisted applicant. (i.e., those selected for item generation).

	<u># of items</u>
I. COMMUNICATION	
A. 1. Interpersonal Competence	0
B. 1. Sociability	0
*C. 1. Sensitivity to constraints on communication	4
*D. 1. Ability to express contrary viewpoints.....	4
II. CONTROL	
A. 1. Self-discipline.....	0
2. Submission to authority	0
3. Time consciousness	0
B. 1. Acceptance of responsibility	0
*C. 1. Respect for authority	3
2. Willing to follow orders	3
3. Moral courage	0
4. Decision-making courage	0
III. COORDINATION	
*A. 1. Subordination of self to mission	3
2. Recognition of the importance of hierarchical structure to achieve mission	4
3. Sense of responsibility	4
*B. 1. Team player	4
2. Awareness of interdependence of jobs to success of mission	3
*C. 1. Delay of gratification	4
2. Trust in institution	4
IV. SOCIALIZATION/INTEGRATION	
A. 1. Attachment to authority figures	0
2. Tendency to attach importance to symbols	0
3. Trust in the institution	0
4. Affective commitment	0
*B. 1. Ability to adapt to a structured lifestyle	3
2. Recognition of the importance of ritual	4
3. Awareness of hierarchical aspects of the organization	2
4. Ability to successfully bond to group	2
5. Persistence in face of adversity	3
6. Prior military-related experience (prior job experience)	1
*C. 1. Respect for authority	1
2. Acceptance of low promotion opportunities	3
3. Gratification from cultural symbols of status	1
4. Satisfaction from experientially derived status	3
5. Perception of military as a respectable profession	5

	# of items
D. 1. Motivation to work hard	0
2. Mastery	0
3. Self-discipline	0
4. Self-confidence	0
5. Self-sufficiency	0
6. Sense of responsibility	0
7. Attention to detail	0
8. Internal locus of control	0
9. Persistence after failure	0
V. MANAGERSHIP	
*A. 1. Ability to plan and organize	0
*B. 1. Ability to solve problems	0
*C. 1. Ability to consult and delegate	0
*D. 1. Ability to monitor operations and environment	5
*E. 1. Ability to direct others	1
*F. 1. Ability to supply relevant information	1
VI. LEADERSHIP	
*A. 1. Ability to consider individual needs	5
*B. 1. Ability to intellectually stimulate others	5
*C. 1. Ability to maintain leadership image	6
*D. 1. Ability to manipulate contingent rewards	2
*E. 1. Ability to apply punishment effectively	1
VII. DEGREE OF FLUX	
*A. 1. Ability to tolerate non-closure	0
2. Personal planning skills	2
*B. 1. Adaptability to unexpected situational contingencies	3
2. Ability to deal effectively with ambiguity	4
3. Coping skills	4
VIII. CONFLICT CONTROL PROCESSES	
*A. 1. Guided aggressiveness/appropriate channeling of energy	3
2. Team player	3
*B. 1. Accommodation to structural demands	0
2. Self-esteem	0
3. Trust in authority	0
C. 1. Self-discipline	0
*D. 1. Team player	2
2. Physical fitness	8
IX. ROLE SPECIFICATION	
*A. 1. Preference for role definition	2
*B. 1. Sensitivity to constraints on behavior	1

	# of items
X. DEGREE OF BUREAUCRACY	
A. 1. Ability to delay gratification	0
B. 1. Ability to envision alternative solutions	0
XI. NATURAL ENVIRONMENTAL CONDITIONS	
A. 1. Ability to perform under stress	0
B. 1. Airsickness immunity	0
*C. 1. Ability to ward off boredom	5
2. Ability to create own challenge/fun	5
D. 1. Physical fitness	0
XII. AVAILABILITY OF NEEDED RESOURCES	
*A. 1. Flexibility	1
2. Resourcefulness	1
3. Ability to match task requirements with available personnel	1
*B. 1. Resourcefulness	3
2. Ability to match task requirements with available material	0
3. Creativity	1
*C. 1. Desire for sources of compensation other than financial	2
2. Ability to budget personal resources	3
D. 1. Ability to tolerate non-closure	0
2. Preparedness	0
3. Ability to demonstrate preparedness	0
*E. 1. Attentiveness to safety	2
2. Attention to detail	0
3. Respect for property	0
XIII. RELATIONS WITH SOCIAL ENVIRONMENT	
A. 1. Commitment to institution over profession	0
2. Ability to adapt to technological environment	0
B. 1. Ability to muster social support	0
2. Ability to negotiate	0
C. 1. Ability to hold beliefs in the face of social pressure	0
D. 1. Ability to muster social support	0
2. Ability to accept predefined roles	0
XIV. EXTERNALLY IMPOSED CHANGE	
*A. 1. Ability to adapt to structured lifestyle	0
*B. 1. Willingness to follow orders	0
2. Trust in authority	0
CLASSIFICATION ITEMS	5
TOTAL ITEMS	174

APPENDIX D: SUGGESTED METHODOLOGY FOR DETERMINING THE LEVEL OF ORGANIZATION-BASED DIMENSIONS

In the absence of a pre-existing methodology that could be used to assess an organization with regard to a taxonomy of organizational dimensions, the LEAP research staff devised an original set of procedures. Because the study described herein was admittedly exploratory and funding limited, the researchers utilized an efficient and expedient methodology that has been described earlier in this paper. A more elaborate set of procedures, however, may be implemented on an experimental basis by those interested in organization-based selection. These procedures are elaborated below.

The LEAP investigators propose that each of the sub-dimensions, which together comprise the 14 organizational dimensions in the SPOT, may easily be transformed into items for use within a self-report rating scale. In this way, an instrument may be devised that would be useful in assessing a wide range of organizational environments. A preliminary version of such a measure, the Organizational Environment Assessment Scale (OEAS), may be found in Appendix E.

Selecting Raters

Given a desire to initiate organization-based selection, a researcher's first task is to select competent judges to make the ratings. The researcher should expect to use between 25 and 100 raters, depending on the size and homogeneity of the organization being assessed. The more an organization has differential components (e.g., production, marketing, R&D, and administration), the more intensively must the organization be sampled. Raters can be either "outsiders," knowledgeable in the process of organizational assessment, or, more likely, internal personnel familiar with the organization. If in-house raters are used, training of these personnel in organizational rating procedures would be necessary.

Nature of the Rating Instrument

As can be seen from an inspection of the rating instrument given as Appendix E, each of the 14 organizational dimensions identified by the SPOT consist of two or more sub-dimensions that may be used by raters to characterize an organization. These items describe key aspects of an organization that, together, may be used to produce an organizational profile, much like the one generated for the Air Force in the present study.

Nature of the Rating Task

Each rater could be asked to initially assess his/her organization independently along the 14 organizational dimensions. Ratings by all raters in a particular sector of the organization could be compared to determine if a required 80% agreement had been achieved. If proximate raters failed to achieve the 80% agreement, discussions to reconcile differences would be required. Then, ratings by raters in all sectors of the organization would be compiled to provide an organization-wide, averaged rating.

Validating the Rating Procedure

Once ratings have been compiled, it would be necessary to validate the rating procedure within the organizational context that carried out the task. To do so is essentially a task of construct, differential, and content validities. Essentially, this validation process is an attempt to answer three basic questions, as follows:

1. When repeated ratings are made, does the rating instrument yield consistent ratings for the same context, enabling a consensus judgment to be made?
2. When different organizational settings are assessed, are differences found on the organization-based dimensions being rated?
3. When several organizations are assessed, are the differences found of the type and in the direction expected?

Before an organization can confidently use the results of the organization ratings collected, all three of the above questions must be answered favorably. The first question is a measure of construct validity, the second, one of differential validity; and the third, one of content validity.

Operationally, one can establish construct validity by examining the ratings of multiple raters and determining if there is great consistency of rating and if the ratings made are consistent with judgments by those familiar with the organization.

Similarly, one can establish differential validity for a given organization by comparing the ratings achieved on all of the 14 organizational dimensions with ratings from similar or dissimilar organizations. For instance, if there is found to be a high correspondence between the ratings of two objectively dissimilar firms, the claim to differential validity decreases.

Finally, the content validity of the rating system can be verified by asking knowledgeable persons within the organization to specify the types of ratings to be

expected. Such assessment could then be translated into a 14-point profile of the organization.

APPENDIX E: ORGANIZATIONAL ENVIRONMENT ASSESSMENT SCALE (OEAS)

Orientation: This instrument is designed to help assess the characteristics and climate of the organization with which you are involved. Fourteen dimensions are provided, which may be used to characterize all organizations.

Directions: Each of the items listed below describe various characteristics shared by many different types of organizations. For each item, please circle the appropriate number on the accompanying scale that best describes how you see *YOUR* particular organization.

N.B.: This is a preliminary version of a measure that is still under development. Permission to use this instrument is prohibited without the prior written consent of the authors.

ORGANIZATIONAL ENVIRONMENT ASSESSMENT SCALE

I. COMMUNICATION

1. Quantity of information exchanged by organizational members.

1	2	3	4	5	6	7
Very Little						Very Much

2. Emphasis of communication.

1	2	3	4	5	6	7
Task Related						Socio-Emotional Aspects

3. Toleration of improper communication.

1	2	3	4	5	6	7
Little Toleration						Much Toleration

4. Degree of unstructured/open communication.

1	2	3	4	5	6	7
Small Degree						Large Degree

II. CONTROL

1. Quantity of imposed control.

1	2	3	4	5	6	7
Very Little						Very Much

2. Extent to which control is distributed.

1	2	3	4	5	6	7
Limited Distribution						Wide Distribution

3. Discrepancy between actual distribution of control and desired control.

1	2	3	4	5	6	7
Little Discrepancy						Much Discrepancy

III. COORDINATION

1. Extent of coordinated activity.

1	2	3	4	5	6	7
Very Little						Very Much

2. Extent to which coordinated efforts are clarified.

1	2	3	4	5	6	7
Very Little						Very Much

3. Extent of time-sequenced coordinated activity.

1	2	3	4	5	6	7
Very Little						Very Much

IV. SOCIALIZATION/INTEGRATION

1. Extent to which successful recruitment involves socialization.

1	2	3	4	5	6	7
Very Little						Very Much

2. Extent of orientation required for successful adaptation.

1	2	3	4	5	6	7
Very Little						Very Much

3. Degree to which reward process involves socialization.

1	2	3	4	5	6	7
Small Degree						Large Degree

4. Extent to which task orientation is integral to socialization.

1	2	3	4	5	6	7
Very Little						Very Much

V. MANAGERSHIP

1. Extent to which the organization relies on planning and organizing.

1	2	3	4	5	6	7
Very Little						Very Much

2. Extent to which the organization relies on its ability to solve problems.

1	2	3	4	5	6	7
Very Little						Very Much

3. Extent to which the organization relies on consulting and delegating.

1	2	3	4	5	6	7
Very Little						Very Much

4. Extent to which the organization relies on monitoring operations and the environment.

1	2	3	4	5	6	7
Very Little						Very Much

5. Extent to which the organization relies on clarifying roles and objectives.

1	2	3	4	5	6	7
Very Little						Very Much

6. Extent to which the organization relies on informing others.

1	2	3	4	5	6	7
Very Little						Very Much

VI. LEADERSHIP

1. Extent to which the organization relies on individualized consideration.

1	2	3	4	5	6	7
Very Little						Very Much

2. Extent to which the organization relies on intellectual stimulation.

1	2	3	4	5	6	7
Very Little						Very Much

3. Extent to which the organization relies on the charisma of its leaders.

1	2	3	4	5	6	7
Very Little						Very Much

4. Extent to which the organization utilizes a contingent reward structure.

1	2	3	4	5	6	7
Very Little						Very Much

5. Extent to which the organization employs a strategy of management-by-exception.

1	2	3	4	5	6	7
Very Little						Very Much

VII. DEGREE OF FLUX

1. Extent to which the organization must adapt to expected changes.

1	2	3	4	5	6	7
Very Little						Very Much

2. Extent to which the organization must adapt to unexpected changes.

1	2	3	4	5	6	7
Very Little						Very Much

VIII. CONFLICT CONTROL PROCESSES

1. Amount of conflict.

1	2	3	4	5	6	7
Very Little						Very Much

2. Amount of conflict reduction/resolution.

1	2	3	4	5	6	7
Very Little						Very Much

3. Amount of tension from unresolved conflict.

1	2	3	4	5	6	7
Very Little						Very Much

4. Amount of tension reduction.

1	2	3	4	5	6	7
Very Little						Very Much

IX. ROLE SPECIFICATION

1. Degree of role definition.

1	2	3	4	5	6	7
Very Little						Very Much

2. Distribution of roles.

1	2	3	4	5	6	7
Very Little						Very Much

X. DEGREE OF BUREAUCRACY

1. Amount of bureaucracy in the organization.

1	2	3	4	5	6	7
Very Little						Very Much

2. Distribution of bureaucracy throughout the organization.

1	2	3	4	5	6	7
Very Little						Very Much

XI. NATURAL ENVIRONMENTAL CONDITIONS

1. Degree to which the natural environment impinges upon the organization.

1	2	3	4	5	6	7
Small Degree						Large Degree

2. Degree to which organizational members are exposed to adverse physical conditions.

1	2	3	4	5	6	7
Small Degree						Large Degree

XII. AVAILABILITY OF NEEDED RESOURCES

1. Availability of personnel resources.

1	2	3	4	5	6	7
Unavailable						Available

2. Availability of material resources.

1	2	3	4	5	6	7
Unavailable						Available

3. Availability of financial resources.

1	2	3	4	5	6	7
Unavailable						Available

4. Availability of market resources.

1	2	3	4	5	6	7
Unavailable						Available

5. Availability of technological resources.

1	2	3	4	5	6	7
Unavailable						Available

XIII. RELATIONS WITH SOCIAL ENVIRONMENT

1. Degree of technological similarity between the organization and its social environment.

1	2	3	4	5	6	7
Small Degree						Large Degree

2. Amount of interaction with non-organization people.

1	2	3	4	5	6	7
Very Little						Very Much

3. Degree of organizational dependence on the social environment.

1	2	3	4	5	6	7
Small Degree						Large Degree

XIV. EXTERNALLY IMPOSED CHANGE

1. Frequency of externally imposed change.

1	2	3	4	5	6	7
Very Little						Very Much

2. Rate of change implementation.

1	2	3	4	5	6	7
Very Slow						Very Fast